Final Report on the Bureau of Alcohol, Tobacco and Firearms Conversion of the Firearms Tracing System

OIG-00-093 June 16, 2000

Office of Inspector General

****

United States Department of the Treasury

OFFICE OF
INSPECTOR GENERAL

DEPARTMENT OF THE TREASURY
WASHINGTON, D.C. 20220
June 16, 2000

MEMORANDUM FOR BRADLEY A. BUCKLES, DIRECTOR
BUREAU OF ALCOHOL, TOBACCO AND FIREARMS

FROM: Dennis S. Schindel
Assistant Inspector General for Audit

SUBJECT: Final Audit Report on the Bureau of Alcohol, Tobacco and Firearms Conversion of the Firearms Tracing System

This memorandum transmits the final report on the Office of Inspector General's audit of the Bureau of Alcohol, Tobacco and Firearms' (ATF) Conversion of the Firearms Tracing System (FTS). Our overall objective was to determine whether ATF effectively converted the FTS from a mainframe operation to a client server operation.

Our review showed that the converted FTS appears to be meeting users needs; however, the conversion did not take place in the most efficient manner. Our review showed that ATF needs to:

- Develop procedures to perform formal reviews of Information Technology (IT) projects;
- Ensure that planning and other key documents for IT projects are maintained and kept current; and
- Improve monitoring of IT projects including the development of complete cost and performance reports.

As a consequence of these conditions, there is an increased risk that inefficiencies could occur in subsequent phases to further improve the FTS or in other IT projects. As a result, projects may not be completed in a cost-effective manner. Additionally, the projects may not fully achieve their intended benefits.

Our draft report made nine recommendations that will help strengthen the IT process. In ATF's response to the draft report, ATF concurred with, and has begun or planned actions to address our recommendations. ATF's official comments

have been incorporated into the report and included in their entirety as an appendix to the report.

We appreciate the courtesies and cooperation provided to our staff during the audit. If you wish to discuss this report, you may contact me at (202) 927-5400 or a member of your staff may contact Ms. Roberta N. Rickey, Director, Program Audit, at (312) 886-6300.

Attachment

cc: James E. Johnson, Under Secretary of the Treasury
for Enforcement

Richard Hankinson, Assistant Director
Office of Inspection

EXECUTIVE DIGEST

Overview

In July 1996, the Bureau of Alcohol, Tobacco and Firearms (ATF), at the direction of the President, initiated the Youth Crime Gun Interdiction Initiative (YCGII) to target gun traffickers who supply firearms to young people. Studies showed that homicides committed by youths with firearms had nearly tripled since 1985. To help implement YCGII, ATF uses its Firearms Tracing System (FTS) to trace firearms recovered in crimes in cities participating in this initiative. This trace information provides ATF and other law enforcement agencies with crucial investigative leads to target gun traffickers supplying firearms to youths. This report focuses on ATF's efforts to redesign the FTS, which had developed several operating deficiencies.

The Office of Inspector General (OIG) included a review of YCGII in its *Office of Audit Annual Plan for Fiscal Year (FY) 1999* because the Administration and Congress are committed to reducing violent crime committed by young people with firearms. This review of the FTS is one in a series of three reviews that will cover ATF activities associated with YCGII. The two other reviews focus on (1) expenditures associated with YCGII and (2) results that YCGII has achieved.

Objectives, Scope and Methodology

The overall objective of this review was to evaluate ATF's redesigned FTS. Our specific objectives were to determine whether ATF (1) met users needs in the redesigned FTS and conducted post-implementation reviews (PIR), (2) adequately planned the FTS redesign, and (3) adequately monitored the implementation of the project.

To accomplish these objectives we reviewed and evaluated project files related to the redesigned FTS. We also discussed the redesigned FTS with officials and employees at ATF's National Tracing Center (NTC), Office of Science and Technology (OST), and the Acquisitions Division in the Office of Management. Our review generally covered the redesign efforts during FY 1997 and 1998. The redesigned FTS went online April 27, 1998. Finally, we surveyed employees of ATF who use the FTS to help us assess how well it is operating.

EXECUTIVE DIGEST

Audit Results

ATF's redesigned FTS has generally met users needs according to an OIG survey. ATF however, needs to develop better policy and procedures to implement a system development life cycle (SDLC) for Information Technology (IT) projects. Without such a policy and related procedures, ATF is less likely to determine whether (1) user needs have been met on IT projects, and (2) planning and monitoring of IT projects can be improved. Our review of the redesigned FTS disclosed that ATF can strengthen its activities in these areas.

First, ATF did not perform a formal PIR to assess user satisfaction with either the redesigned FTS or the agency's IT process. As a consequence of not performing these reviews, ATF increased the risk that project specific issues would not be identified and resolved quickly. Although most users are currently satisfied with the redesigned FTS, 30 percent said the FTS worked without errors only to some or a little extent immediately after redesign. Also, issues related to the planning and monitoring of IT projects may not be identified, thereby increasing the risk that the process may not have been cost efficient. Further, projects may not meet expectations. Treasury and other Federal guidance recommends agencies perform formal reviews to identify and address issues with IT projects and to improve how the organization selects, manages and uses its IT resources.

Second, although ATF developed a project plan in the early stages of planning for the redesigned FTS, that plan was not updated to reflect changes in ATF's new architecture[1]. As a result, ATF had less assurance that the redesigned FTS complied with standard industry practices thereby increasing the risk that the redesign would not proceed efficiently. General Accounting Office (GAO) and Treasury guidance states that agencies should ensure, for each IT project, that the project's cost, schedule, and performance information is kept as current and as accurate as possible. ATF did not follow the recommended standard industry practices because of the need to accelerate implementation of the redesigned FTS and to allow the redesign to occur within ATF's architecture.

Third, ATF did not have data to show the total cost of the FTS redesign. Managers also did not have other formal performance and schedule reports that would have assisted them in monitoring the project to help them hold employees accountable. Consequently,

[1] The Clinger-Cohen Act defines information technology architecture as an integrated framework for evolving or maintaining existing IT and acquiring new IT to achieve the agency's strategic and information resources management goals.

management had less assurance that the project was implemented at acceptable costs, within reasonable timeframes and included all expected benefits. Federal statutes, Office of Management and Budget (OMB) directives, and GAO guidance, require that agencies have a defined, documented and repeatable process for monitoring IT projects. The project team and the Contracting Officer's Technical Representative (COTR) did not prepare the reports and other analyses because of inadequacies in ATF procedures and information systems. Additionally, officials did not ensure that the COTR performed other required duties.

Recommendations and Management Response

Our draft report, issued on March 2, 2000, made nine recommendations to enhance ATF's oversight of IT projects. ATF agreed with and will implement all recommendations. The details of ATF's responses and actions initiated to address our findings and recommendations are contained in the body of this report. We believe that implementation of these recommendations will help strengthen ATF's procedures and controls over current and future IT projects.

TABLE OF CONTENTS

BACKGROUND

The Bureau of the Alcohol, Tobacco and Firearms (ATF) is responsible for the enforcement of the Gun Control Act and is the sole agency responsible for tracing firearms used in crimes and recovered at crime scenes. Toward that end, ATF has established the National Tracing Center (NTC), which is located in [redacted] Firearms tracing is described as the systematic tracking of firearms from manufacturer to purchaser for the purpose of aiding law enforcement officials in (1) identifying suspects involved in criminal violations, (2) establishing stolen status, and (3) providing ownership.

The NTC receives trace requests from law enforcement agencies and from ATF field offices through letters, faxes, telephone calls, the National Law Enforcement Telecommunications System (NLETS) and other electronic means. Data entry personnel then enter trace information into the Firearms Tracing System (FTS). The collection of information concerning thousands of trace requests and the NTC trace response to those requests represent the core memory of the FTS.

The following summarizes the traces that have been processed by the FTS during FYs 1996 through 1998:

Volume of Firearm Traces

Fiscal Year	Number of Traces Performed
1996	114,223
1997	189,197
1998	189,482

In addition to its primary goal, ATF recognizes that a systematic analysis of the FTS data can assist law enforcement agencies in regulating firearms trafficking. ATF must often contact the Federal Firearms Licensee (FFL) when conducting traces. When these contacts are recorded as data in the FTS, the development of certain patterns over time can be identified. Patterns of responses by FFLs to trace requests and also patterns of purchasing, firearm recoveries, and time intervals, can help identify illegal firearms trafficking. The cities that are a part of Youth Crime Gun Interdiction Initiative (YCGII) are to use this data to initiate investigations against criminals illegally transferring firearms to juveniles, adult criminals and other prohibited persons.

BACKGROUND

As the volume of firearm traces increased in the mid 1990s, officials recognized that the existing FTS, operating on an older mainframe database, had the following deficiencies:

- Limited query capabilities
- Slow response times
- Frequent system breakdowns
- Lack of Year 2000 compliance

Accordingly, officials recognized a need to redesign the FTS and eliminate the deficiencies. Additionally, ATF recognized a need for an Enterprise Systems Architecture (ESA) which is a mix of hardware and software to form a platform on which a suite of continually evolving application services would be installed to support all ATF activities. As part of this overall effort, ATF initiated a project to redesign and improve the FTS while maintaining the same functionality. The redesign was to decrease response times and increase system reliability and improve query capabilities. New features were also to be added to allow users to use the FTS more efficiently. To accomplish this goal, the redesigned FTS was to migrate the existing mainframe system to a relational database with a Windows interface in a client-server environment.

The proposed redesigned FTS also was to provide a central database for all trace-related information. In summary, the improvements to the FTS would address the deficiencies listed above. A project team, consisting of contractors working with employees from the Office of Science and Technology (OST) and the Office of Firearms, Explosives and Arson (FEA) implemented the redesigned FTS during 1997 and 1998. The redesigned FTS went online April 27, 1998.

OBJECTIVES, SCOPE AND METHODOLOGY

The OIG included this review in its *Office of Audit Annual Plan for FY 1999*, because reducing violent crime committed by young people with firearms has been a concern to the Administration and to Congress. This review, is one of three reviews on ATF activities that are associated with YCGII. The other two reviews focus on (1) expenditures associated with the YCGII program and (2) efforts at field offices and headquarters to work with other Federal, State, and local law enforcement agencies to develop and implement investigative and prosecutive strategies that target illegal gun traffickers.

The overall objective of this review was to evaluate ATF's redesigned FTS. Our specific objectives were to determine whether ATF: (1) met users needs in the redesigned FTS and conducted PIRs; (2) adequately planned the redesign of the FTS, and (3) adequately monitored the implementation of the project.

To accomplish our review, we conducted work at ATF Headquarters where we interviewed officials from (1) OST and (2) FEA, which includes the National Tracing Center. We also interviewed officials from ATF's Acquisitions Division in the Office of Management and reviewed contracting files related to the redesigned FTS. We sent a questionnaire to ATF and contract employees who use the FTS to help us assess how well the redesigned FTS is working. Specifically, we surveyed two groups of users that we consider "general" and "functional" users. General users are data entry personnel, ATF agents and other employees that use the FTS for investigations. Functional users are usually supervisors, program analysts, computer specialist or other system analysts who understand the functionality of the FTS.

Audit work was limited to the redesigned FTS. Our fieldwork was performed from January 1999 through August 1999. Our work was conducted in accordance with *Government Auditing Standards* issued by the Comptroller General of the United States, and included such audit tests as we determined necessary.

Audit Results

Finding 1. ATF Needs to Assess User Needs and Perform Formal Reviews of IT Projects

ATF had not performed a formal PIR of the redesigned FTS to assess user satisfaction with either the redesigned FTS or the agency's IT process. As a consequence of not performing these reviews, the risk that project specific issues will not be identified and resolved quickly were increased. Although most users are currently satisfied with the redesigned FTS, 30 percent said the FTS worked without errors only to some or a little extent immediately after redesign. Also, issues related to the planning and monitoring of IT projects may not be identified thereby increasing the risk that the process will not be cost efficient. In addition, further projects may not meet expectations. Treasury and other Federal guidance requires agencies to perform formal reviews to identify and address issues with IT projects and to improve how the organization selects, manages and uses its IT resources.

Recommendations

We recommend the ATF Director ensures that officials:

1) Document and implement a process for (a) conducting PIRs on IT projects using a standard methodology such as that outlined by the General Accounting Office (GAO) and (b) defining the roles and responsibilities of individuals who will address identified problems.
2) Review the results of the OIG survey to determine what other issues may need to be addressed with the FTS.
3) Conduct PIRs on subsequent phases of the FTS and other IT projects.

Management Response and OIG Comments

ATF management agreed with the first recommendation and the OST will begin developing a directive for conducting post implementation reviews on IT projects. This process will include role and responsibility identification. The directive will be completed during FY 2000.

ATF management agreed with the second recommendation. During this fiscal year, OST's Software Management Branch (SMB) will work with the NTC to establish a team consisting of user representatives from ATF field divisions, along with the NTC's Tracing and Crime

Gun Analysis Branches. The team will review the survey and make recommendations on other issues that need to be addressed within the FTS. The results of this review will be presented to the ATF's Information Resource Management Council.

ATF management agreed with our third recommendation. OST will develop standard processes that include post implementation reviews of all IT projects. The documentation will be completed during FY 2000. ATF management stated that their further review of PIR requirements supports OST coordination of post implementation reviews in conjunction with the program offices. The finalized report would then be submitted to the Office of Inspection.

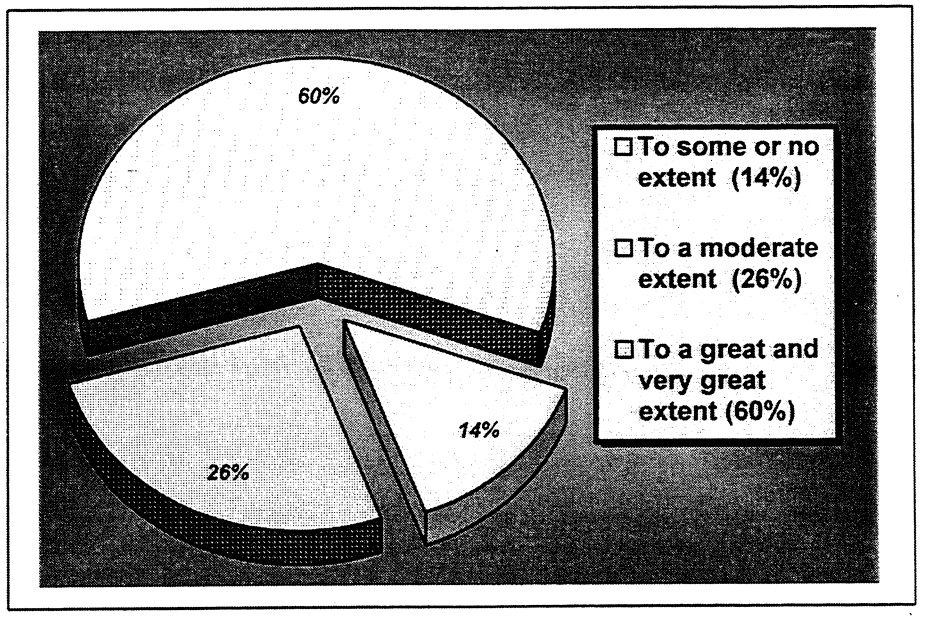
We believe the above actions meet the intent of our recommendations and should help ATF develop procedures to perform formal reviews of IT projects.

Details

ATF made no formal assessment after the implementation of the redesigned FTS to determine whether user needs had been met. Accordingly, to help us determine whether users needs were met, we surveyed users to determine their satisfaction with the redesigned FTS. The following chart summarizes current user satisfaction with the FTS. (The entire questionnaire is summarized in Appendix 2)

CHART 1

Current User Satisfaction with the FTS



Source: OIG Questionnaire responses

As the chart shows, about 60 percent of all users are currently satisfied with the FTS to a great or very great extent. (*See Question 17 of the Summary of Questionnaire Responses in Appendix 2.*)

Specific elements of the redesigned FTS, such as the ability to understand and use screens, were also viewed favorably by the respondents. A PIR can help show current user satisfaction with an IT project like the FTS redesign. A PIR can also help identify issues more quickly so officials can address them. For example, immediately after redesign: *(See Question 16 of the Summary of Questionnaire Responses in Appendix 2.)*

- 30 percent of the respondents stated the system worked without errors only to some or to a little extent. An additional 32 percent stated the system worked without errors to only a moderate extent.
- 27 percent of the respondents stated that the system worked quickly and efficiently only to some or to a little extent. An additional 34 percent said the system worked quickly and efficiently only to a moderate extent.

The value of a formal PIR to assess issues in a timely manner, like those cited above, has been recognized by Treasury and GAO guidance and also by private industry. Specifically, Treasury Directive on the

Information System Life Cycle Manual (TD P 84-01) states a PIR is conducted to (1) ensure that the system functions as planned and expected, (2) verify that the system cost is within the estimated amount, and (3) verify that the intended benefits are derived as projected. Normally, this one-time review occurs after a major system implementation or after a major enhancement to a system. Similarly, the National Institute of Standards and Technology (NIST) recognizes TD P 84-01 as a source for agencies that use a system life cycle methodology.

ATF, however, did not perform a formal review after implementation. ATF did not perform this review because neither the ATF *FY 1997-2001 Operational Information Technology Plan* (Plan) nor any other document included a formal methodology for conducting PIRs. As a result, ATF did not allocate funds to perform a formal review of the FTS after redesign.

An Information Services Division (ISD) official also stated that ATF did not perform any formal review on the redesigned FTS because it met deliverables that were finalized one month prior to implementation. Further, users provided informal feedback to the official that they could perform more traces with the redesigned FTS.

However, unless the needs of the FTS users are formally assessed, ATF has less assurance that users are satisfied with the redesigned FTS. Also, ATF risks not identifying user related issues on future IT projects. A PIR can identify other areas that can be improved, such as in planning IT projects and monitoring their implementation. To illustrate, Findings 2 and 3 of this report discuss issues in ATF's planning and monitoring of the redesigned FTS that could also have been identified in a PIR.

Accordingly, ATF needs to ensure that it implements a PIR process that follows GAO and other Federal guidance. This guidance recommends that an agency have a formal review process that clearly explains and communicates the purpose of the PIR and states when the PIRs are to be conducted. Additionally, PIRs should: (a) occur on a regular and timely basis; (b) delineate roles, responsibilities, and authorities for people and offices involved in conducting the PIRs; (c) stipulate how conclusions and recommendations resulting from PIRs are to be communicated to and reviewed by senior management; and (d) include assessments of customer satisfaction and mission impact.

Although ATF's Plan did not include a documented methodology for conducting PIRs, officials recognized the need for them. The Plan

stated a review process should include a PIR because the benefits of a PIR can determine what problems that ATF can avoid in future IT projects. In response to our draft audit report, ATF stated that OST will coordinate PIRs in conjunction with program offices. This action, combined with our other recommendation, should help ensure a more effective PIR process for IT projects.

Finding 2. Planning Documents Should Be Maintained and Kept Current

Although ATF developed a project plan in the early stages of planning for the redesigned FTS, the plan was not updated to reflect changes in ATF's new architecture. As a result, ATF had less assurance that the redesigned FTS complied with standard industry practices thereby increasing the risk that the redesign did not proceed efficiently. GAO and Treasury guidance states that agencies should ensure, for each IT project, that the project's cost, schedule, and performance information be kept as current and as accurate as possible. ATF did not follow the recommended standard industry practices because of the need to accelerate implementation of the redesigned FTS and to allow the redesign to occur on a new platform.

Recommendations

We recommend the ATF Director ensure that:

1. Planning documentation for each IT project be kept as current and as accurate as possible.
2. A senior official at the appropriate level is involved in future FTS phases and other major IT projects.
3. OST officials complete actions to develop a policy for a System Development Life Cycle (SDLC). This action should include procedures to implement the SDLC with standard processes for interaction and good internal communication and coordination.

Management Response and OIG Comments

ATF management concurred with our first recommendation and the SMB will ensure that planning documentation for each IT project will be kept as current and as accurate as possible. To ensure updated and accurate documentation, a group consisting of users and IT personnel will convene regularly as a formal configuration management review team.

ATF management agreed with our second recommendation and stated that ISD has recently hired a SMB chief to help ensure that a senior official at the appropriate level is involved in any future significant IT projects. Currently, the Division Chief, NTC; Director, YCGII; and the Division Chief, Information Services are jointly involved in discussions of requirements, production delivery schedules, and

performance expectation of future changes to the FTS and related systems.

ATF management agreed with our third recommendation. The OST will develop and implement a SDLC in FY 2001. Steps have already been taken to improve involvement by client managers from the appropriate program areas.

We believe the above actions satisfy our recommendations and should ensure that planning and other key documents for IT projects are maintained and kept current.

Details

As early as 1995, ATF produced key project plan documentation to redesign the FTS. ATF had prepared the following specific documents for this effort:

- Business Process Reengineering of the Firearms Tracing Process
- Reengineering Alternatives Evaluation
- FTS Functional and Technical Assessment
- Requirements Document

These documents showed that ATF had considered various assumptions, alternatives, costs, benefits and risks for redesigning the FTS.

Subsequently, ATF's focus was redirected to modernizing all of ATF's computer systems with an Enterprise System Architecture (ESA). Specifically, in FY 1996, ATF developed a plan for the acquisition and deployment of infrastructure equipment, integrated networks, and operating and application software. This plan was initiated so ATF could (1) achieve the goals of its core business strategies and (2) form the foundation of an architectural IT vision into the next millennium.

As a result of this redirection, the FTS project plan and related documentation developed during 1995-96 were no longer applicable to ATF's efforts to redesign the FTS. Also, there were changes with ATF officials and other key employees who had been assigned to the project. Additionally, another contractor replaced the contractor who initially worked on the project.

During this period of time, officials continued to recognize the need to redesign the FTS. The FTS was running out of trace numbers to assign to trace requests that were received from law enforcement agencies and ATF field offices. Also, ATF had to produce accurate information for

a report on the YCGII to the President. These needs combined with the FTS mainframe deficiencies described on page 2 of this report, resulted in the decision to accelerate implementation of the redesigned FTS to April 27, 1998.

Because of the expedited April 27, 1998 implementation date, officials did not update the project plan and related documentation such as the requirements document. One official explained that planning documents were revised but these revisions were discarded as the redesign progressed. Additionally, planning documents could not be revised for every change to add or delete a specific function because of the need to implement the new system quickly.

In addition, a final functional specification document was not prepared prior to the implementation date because of the need to accelerate the project. Instead, the final functional specification document was issued on July 9, 1998 after the redesigned FTS was implemented. Users advised us that they were unaware the functional specification document existed until the OIG presented it to them.

As a consequence of the above approach, there was confusion between FTS users, ISD computer specialists, and contracted employees on what functionality would be delivered by April 27, 1998. On April 15, 1998, two weeks before the implementation date an OST official advised other ATF senior officials that the NTC Director and other employees did not have a complete understanding and agreement as to what functionality would be available in the redesigned FTS. Specifically, NTC employees were concerned that the redesigned FTS did not include the following functions:

- Batch download process
- National Law Enforcement Telecommunications System (NLETS) process
- Interstate Theft module
- Error report for supervisors
- Entry data field security

Additionally, NTC employees did not believe that testing had been conducted in the most effective and efficient manner. To address these concerns, a senior official had to convene a series of meetings between all parties as to what action was needed to address these issues by April 27, 1998.

As described previously in our prior chapter, users had concerns about the accuracy and efficiency of information immediately after implementation. These issues could have been minimized had ATF kept project documentation current, combined with sufficient reviews and testing as the redesign effort progressed. As a result of not revising or maintaining key planning documents, ATF had less assurance that the redesign complied with standard industry practices. This lack of assurance also increased the risk that the redesign did not proceed in the most efficient manner possible.

Industry practices and TD P 84-01 recognize the need for entities to maintain updated project file documentation and perform reviews after each project phase to ensure each phase is completed successfully. This process ensures that all products created during the life cycle meet functional and performance requirements as outlined in all requirements documentation. Current project file data together with formal reviews can help to:

(1) ensure that project direction and goals remain consistent with the organization's strategic plan and goals;

(2) provide an opportunity to terminate projects which fail to demonstrate an adequate return on investment;

(3) measure the ongoing progress (i.e., budget, schedule and deliverables) and identify potential problems for corrective actions; and

(4) approve phase results and authorize further work.

As noted by GAO guidance and recent studies on other organizations' IT processes, information in the project plan and related documentation should be as up to date and as accurate as possible in order for management reviews and analyses to be effective. In general, senior management involvement should be greatest in the earlier phases of systems development efforts.

Standard industry practices also dictate that the functional specification document be provided to users and other parties prior to implementation. This action is necessary because the document specifies information about the (1) system requirements, (2) operating environment, (3) design characteristics and (4) system specifications for the redesigned FTS.

Although not every change to a system's requirements may be documented due to time constraints or other factors, sufficient documentation should be retained to show how the system

requirements evolve and impact upon equipment, software, and operations. Maintaining current documentation will also help minimize misunderstanding between parties involved in the development of an IT project. The documentation process also permits institutional learning to occur.

Corrective Actions Initiated by ATF

ATF has recognized the need to improve its IT process. For example, a senior OST official believed additional senior level involvement in very large projects such as the redesigned FTS is beneficial. Involvement by senior level officials would help to enforce agreements between developers and users regarding goals and objectives of the IT projects and what the system should contain.

To help strengthen its IT process, ATF has initiated the following steps, as outlined in its Information Services Division (ISD) FY 1999 Strategic Action Plan:

- Develop a policy and procedures to define a SDLC.
- Clearly articulate user requirements with an approval by the division chief or higher level official.
- Document changes to requirements with sign-off at the division chief or higher level.
- For new projects and the re-design of existing systems, (a) the client office must appoint a full time project manager with a supporting team to form a consensus concerning requirements necessary for the project, and (b) ISD must appoint a full time project leader.

An ISD official advised us that a policy and related procedures, which would clearly define a SDLC, had not yet been completed because an individual had not yet been hired for a key position with responsibilities for this policy. ATF intends to develop and implement this policy during FY 2000. We believe this policy should be followed unless waived by the Assistant Director of OST and other Assistant Directors involved in the project.

Additionally, the Strategic Action Plan recognized the need to institute good standard repeatable processes for interaction and ensure good internal communication and coordination. We believe this action is

appropriate and should be formalized in a directive that can be communicated to all parties involved in IT projects. Such action, combined with our other recommendations, should help ensure the effective implementation of future IT projects including subsequent phases of the FTS.

Finding 3. ATF Needs to Track IT Project Costs and Develop Performance Reports

ATF did not have data to determine the total cost of the FTS redesign. Managers also did not have formal performance and schedule reports that would assist them in monitoring the project to help them hold employees accountable. Consequently, management had less assurance that the project was implemented at acceptable costs, within reasonable timeframes and included all expected benefits. Federal statutes, and implementing OMB directives and GAO guidance, require that agencies have a defined, documented and repeatable process for monitoring IT projects. The project team and the COTR did not prepare the reports and other analyses because of inadequacies in ATF's procedures and information systems. Additionally, officials did not ensure that the COTR performed other required duties.

Recommendations

We recommend the Director of ATF ensure that officials:

1. Establish and implement directives on monitoring IT project costs, schedule and performance.
2. Hold the project manager(s) accountable for addressing issues and risks that arise during the project.
3. Adequately supervise the COTR for compliance with the responsibilities listed in the COTR Handbook.

Management Response and OIG Comments

ATF management concurred with our first recommendation and the ISD is currently working on developing a methodology for monitoring IT project costs, scheduling, and performance. OST has solicited participation of program offices in monitoring IT projects. Cost, schedule and performance monitoring will be implemented during FY 2001.

ATF management agreed with our second recommendation and stated that as part of the new pay banding demonstration project, each project manager will be accountable for, among other things, addressing all issues and risks that arise during a project and will be evaluated on their performance in this area.

In response to our third recommendation, ATF stated that it has taken action to ensure all identified COTRs have had both the basic and any appropriate refresher training. When a final version of the previous OIG report is released, it will become the training portion of the next Acquisition Branch meeting and the next COTR Refresher Training.

Additionally, an ISD staff member has been assigned to oversee all the COTRs. The staff member has regular meetings with all the COTRs to ensure contract compliance providing an additional level of supervision. In addition, the team of COTRs also has routine meetings with ATF's Contracting Officer.

We believe the above actions satisfy our recommendations and should improve monitoring of IT projects including the development of complete cost and performance reports.

Details

ATF did not know the cost of the FTS redesign. Senior officials advised us that they had meetings about the FTS redesign. However, they did not have cost data, formal performance, or other schedule reports to help them monitor the project and hold the project manager and other employees accountable for performance. As summarized in the following sections, neither the project manager nor other members of the project team prepared these types of reports. Finally, the COTR did not perform required activities and prepare other reports in accordance with the requirements of the COTR Handbook.

Project Costs Unknown

Neither the project team, nor the COTR assigned to the FTS redesign could provide data regarding the total cost of the FTS redesign. Officials explained cost data was not available because ATF's information system could not generate data on the total cost of the IT project. Accordingly, during the audit, we attempted to determine the total cost of the FTS redesign. Our examination of the contract records, YCGII budgetary information, and other informal documentation shows that ATF had spent between $1.2 to $1.7 million to implement the redesigned FTS. We were unable to determine, however, the hardware costs associated with the FTS redesign and other estimated costs associated with future enhancements that ATF expects to make to the FTS.

Performance and Other Reports Not Prepared

ATF employees, including the project team assigned to the FTS redesign, exchanged considerable electronic mail regarding the project. This electronic mail showed that employees and contractors recognized certain risks and issues as the FTS redesign progressed. For example, the electronic mail showed that:

- The project team, contractor, and FTS users did not always agree on existing system capabilities and functionality.
- The FTS software was not sufficiently tested prior to being placed into service in spite of risks to trace reporting.

These risks and other issues that became apparent during redesign were documented and made available on a "hot list"[2] to project participants. Although these issues were recognized, neither the project manager or other team members prepared performance or other status reports to show how these issues were addressed in a timely manner. For example, the project team did not summarize weekly contractor status reports, annotate task completion, or record risk mitigation assessments.

Other Monitoring Activities Not Performed

In addition to the project team not preparing performance reports, the COTR assigned to the project did not perform duties required by the COTR Handbook for monitoring the contractor's work.

Specifically the COTR did not: 1) provide technical surveillance, 2) audit project costs, 3) measure contractor work against statements of work, and 4) monitor progress towards project completion and financial status.

The COTR did not prepare reports and perform other monitoring activities because of deficiencies in ATF guidance, information systems, and management oversight. First, ATF lacked essential guidance that defined the specific reports, and processes needed to monitor IT projects. Second, as previously cited, ATF's information systems could not generate data on the total cost of IT projects. Third, the COTR did not prepare other reports or perform required activities because the COTR believed a supervisor was performing these activities. The supervisor advised us, however, that he also had not performed these activities. Senior management did not ensure that the COTR was performing these functions.

[2] Also known as Release Notes, a listing of software problems encountered during pre-release development.

Without reports that track cost, schedule and performance data, senior officials and the project team are less likely to identify issues quickly and take timely corrective action. Officials will not have sufficient information to show that the project is progressing at the lowest cost and within expected timeframes. Additionally, they have less assurance that the project includes all of the functions that were planned for the project. Finally, management will be less able to hold project managers and other employees accountable for meeting cost, schedule and performance goals. Addressing these issues is important because of the large number of IT projects that OST is working on. OST officials advised us that they currently have 40 IT projects in process.

Federal Statutes Require Performance, Schedule and Cost Analyses

To help ensure that Federal agencies monitor IT projects more effectively, Congress has enacted several statutes during the 1990's. These statutes included (1) the Government Performance and Results Act of 1993, (2) the Federal Acquisition Streamlining Act of 1994 (FASA), (3) the Paperwork Reduction Act of 1995 (PRA), and (4) the Clinger Cohen Act of 1996. The statutes: reinforce financial accountability; emphasize results oriented management; define cost performance and schedule goals; and improve the acquisition of IT to streamline federal programs. To illustrate, FASA requires agencies to establish and track major acquisitions against cost, schedule, and performance goals. Also, the head of each civilian agency is required to approve or define the cost, performance, and schedule goals for major acquisition programs of the agency.

To assist Federal agencies in implementing these statutes, OMB has issued circulars and other guidance. OMB Circular A-130 (guidance resulting from the PRA), for example, states that agencies must perform various benefit-cost analyses to support management oversight. These analyses are used to assess and document actual versus estimated costs and benefits, identify causes for discrepancies, and learn how to manage IT more effectively in the future.

Recent GAO guidance also describes how each agency can establish a defined, documented, and repeatable process for monitoring and reviewing IT projects. The GAO guidance states that project data should consist of such items as comparisons of actual results achieved to date versus estimates, and an assessment of benefits achieved.

Leading organizations that GAO studied also hold project managers accountable for meeting cost, schedule, and performance goals. Some organizations allow individual project managers to decide what

management tools best meet their needs to monitor and track project milestones and to identify cost and schedule variances from the project plan. Given that flexibility, however, senior officials still need to ensure that the project manager and other employees are held accountable for adequately addressing issues that arise during the implementation of IT projects. As part of that effort, officials also need to ensure that the COTR receives sufficient direction from senior management and follows the requirements in the COTR Handbook.

We discussed this issue with senior officials and they agreed that improved reporting and data would enhance their monitoring of IT projects. For example, the Deputy Assistant Director for FEA stated that enhanced status and cost reports would assist senior officials in monitoring IT projects, including future enhancements to the FTS. To illustrate, upon implementation of the FTS redesign on April 27, 1998, various other functions had not yet been included in the redesigned FTS. The project team continued to work on FTS functions such as the (1) FFL and Interstate Theft, (2) Queries Subsystem, and (3) Batch Download Automation. By October 1, 1998, the project team had implemented these functions in the FTS. Status reports to senior officials would have helped ensure these enhancements progressed timely. Such reports would also help to ensure future efforts to incorporate security controls into the FTS are satisfactorily completed. At the time we completed fieldwork, security controls had not been fully incorporated.

Corrective Actions Initiated by ATF

During our review, the Director of OST advised us that ATF plans include the following actions:

1. OST and the program offices will both be required to sign the requisitions for the projects to approve the work and the funding;
2. ATF's Information Resource Management Council will have financial reports for its meetings that will show a project's cost for the past two years, current year, and future two years. The financial reports will include detailed listings of requisitions for the projects.
3. OST is soliciting the involvement of the program offices in the monitoring of contractor performance.

These planned actions are appropriate; however, ATF should also ensure that the new ATF financial system provides the data needed to track total costs of IT projects. Completion of these proposed actions

and implementation of our other recommendations will help officials monitor IT projects more effectively.

ABBREVIATIONS

ATF	Bureau of Alcohol, Tobacco and Firearms
COTR	Contracting Officer's Technical Representative
ESA	Enterprise System Architecture
FASA	Federal Acquisition Streamlining Act of 1994
FEA	Office of Firearms, Explosives and Arson
FFL	Federal Firearms Licensee
FTS	Firearms Tracing System
FY	Fiscal Year
GAO	General Accounting Office
ISD	Information Services Division
IT	Information Technology
NLETS	National Law Enforcement Telecommunications System
NTC	National Tracing Center
OIG	Office of Inspector General
OMB	Office of Management and Budget
OST	Office of Science and Technology
PIR	Post-Implementation Review
Plan	Operational Information Technology Plan
PRA	Paperwork Reduction Act of 1995
SDLC	System Development Life Cycle
SMB	Software Management Branch
YCGII	Youth Crime Gun Interdiction Initiative

Summary of Questionnaire Responses

The questionnaire on the ATF's redesigned FTS was sent to 299 FTS users. We received questionnaire responses from 137 users, which represents 46 percent of those surveyed. The questionnaire participants did not provide responses to all the questions and for some questions they provided more than one response. As a result, the percentage shown in each question may not total to 100 percent. In addition, we surveyed two groups of users that we consider as "general" and "functional" users. General users are FTS data entry personnel and ATF agents and employees that use the FTS for investigations. Functional users are defined as users that know the functionality of the FTS, usually supervisors, program analysts, computer specialists or system analysts.

The following abbreviations are presented with all survey questions to identify which user group received each question:

- **Functional User Group (F)**
- **General User Group (G)**

QUESTIONNAIRE RESULTS

1. What FTS subsystem(s) do you use and how frequently? (F & G)

FTS Subsystem:

Sub-system:	Trace	Multiple Sales	Suspect Guns	Interstate Theft	FFL Theft	Decode Tables	Total Responses
Users:	91%	59%	28%	16%	19%	20%	129

How Frequently:

Sub-system:	Trace	Multiple Sales	Suspect Guns	Interstate Theft	FFL Theft	Decode Tables
Daily	67%	58%	33%	43%	42%	62%
Weekly	23%	25%	28%	24%	21%	19%
Monthly	10%	17%	39%	33%	38%	19%
Total Responses	118	76	36	21	24	26

Summary of Questionnaire Responses

2. To what extent is the FTS important to accomplishing your duties? (F & G)

Little Or No Extent	Some Extent	Moderate Extent	Great Extent	Very Great Extent	Total Responses
9%	6%	12%	15%	58%	137

3. For what purpose do you use the FTS? (F & G)

To enter new FTS information?

Yes	No	Total Responses
54%	46%	120

To update FTS information?

Yes	No	Total Responses
56%	44%	122

To view FTS information?

Yes	No	Total Responses
95%	5%	128

To perform maintenance on decode tables?

Yes	No	Total Responses
5%	95%	91

4. Did you participate in a PIR or any other studies conducted to show the success of the FTS conversion? (F)

Yes	No	Total Responses
8%	92%	12

Summary of Questionnaire Responses

Using the following scale, please rate from 1 to 5 the extent of the information you received from the redesigned FTS, when it was first put into production and today. (F & G)

(5 = To a very great extent; 4 = To a great extent; 3 = To a moderate extent; 2 = To some extent; 1 = To little or no extent)

Immediately after redesign	**5**	**4**	**3**	**2**	**1**	**Total Response**
Complete	10%	23%	39%	17%	12%	101
Accurate	11%	25%	38%	15%	11%	102
Timely	10%	17%	39%	22%	12%	104
Currently	**5**	**4**	**3**	**2**	**1**	
Complete	27%	45%	19%	1%	8%	117
Accurate	31%	46%	14%	2%	7%	118
Timely	26%	42%	23%	3%	6%	118

6. Did you observe any errors immediately? (F & G)

Yes	**No**	**Total Responses**
31%	69%	126

If you answered yes, how frequently did you observe errors?

Hourly	**Daily**	**Weekly**	**Monthly**	**Total Responses**
6%	39%	33%	22%	36

7. To what extent does the redesigned FTS provide the information you need to accomplish your duties? (F & G)

Little Or No Extent	**Some Extent**	**Moderate Extent**	**Great Extent**	**Very Great Extent**	**Not Applicable**	**Total Responses**
2%	11%	13%	30%	37%	7%	136

Summary of Questionnaire Responses

8. Are there any security deficiencies in the redesigned FTS? (F)

Yes	No	Total Responses
67%	33%	9

9. Are you able to perform the same functions now with the redesigned FTS, as you did with the prior FTS operating on the mainframe? (F)

Yes	No	Total Responses
60%	40%	10

10. Were you involved in the testing of the redesigned FTS? (F & G)

Yes	No	Total Responses
22%	78%	136

If you were involved was the overall testing of the redesigned FTS system adequate?

Yes	No	Total Responses
80%	20%	30

11. Did you receive training on how to use the redesigned FTS? (F & G)

Yes	No	Total Responses
67%	33%	136

If you received training on the redesigned FTS, to what extent do you think it was adequate?

Little Or No Extent	Some Extent	Moderate Extent	Great Extent	Very Great Extent	Total Responses
1%	11%	37%	36%	15%	87

Summary of Questionnaire Responses

12. Were you involved in the FTS redesign? (F & G)

To determine user requirements?

Yes	No	Total Responses
11%	89%	133

In designing the system?

Yes	No	Total Responses
4%	96%	130

In testing the system?

Yes	No	Total Responses
20%	80%	132

To identify needed modifications?

Yes	No	Total Responses
20%	80%	132

13. Regardless of whether you were directly involved in redesigning the FTS, were you provided the opportunity to express your needs or make recommendations to improve the system before the conversion to either ATF management or the contractors who were responsible for redesigning the FTS? (F & G)

Yes	No	Total Responses
52%	48%	133

14. Were all of the recommendations you proposed for the redesigned FTS incorporated? (F & G)

Yes	No	Did Not Make Recommendations	Total Responses
21%	12%	67%	129

Summary of Questionnaire Responses

15. To what extent does the redesigned FTS meet those requirements defined in the functional specification document? (F)

Little Or No Extent	Some Extent	Moderate Extent	Great Extent	Very Great Extent	No Basis to Judge	Total Responses
0%	8%	17%	17%	0%	58%	12

16. Using the following scale, please rate from 1 to 5 the adequacy of system functions for the redesigned FTS, when it was first put into production and today. (F & G)

(5 = To a very great extent; 4 = To a great extent; 3 = To a moderate extent; 2 = To some extent; 1 = To little or no extent)

Immediately after redesign	**5**	**4**	**3**	**2**	**1**	**Total Responses**
Screens are easy to understand and use	16%	36%	27%	16%	5%	102
System works quickly and efficiently	9%	30%	34%	21%	6%	102
System works without errors	7%	32%	32%	22%	8%	101
Online messages are clearly presented	7%	42%	31%	16%	3%	97
Online messages adequately explain commands and concepts	7%	37%	36%	14%	5%	97

Currently	**5**	**4**	**3**	**2**	**1**	**Total Responses**
Screens are easy to understand and use	35%	48%	13%	3%	0%	120
System works quickly and efficiently	16%	53%	26%	5%	1%	121
System works without errors	16%	56%	21%	7%	1%	120
Online messages are clearly presented	17%	58%	21%	3%	1%	116
Online messages adequately explain commands and concepts	17%	57%	22%	3%	1%	116

Summary of Questionnaire Responses

17. Overall, to what extent are you satisfied with the redesigned FTS? (F & G)

Little Or No Extent	Some Extent	Moderate Extent	Great Extent	Very Great Extent	Total Responses
2%	12%	26%	44%	16%	128

MANAGEMENT RESPONSE

DEPARTMENT OF THE TREASURY
BUREAU OF ALCOHOL, TOBACCO AND FIREARMS
WASHINGTON, D.C. 20226

DIRECTOR

APR 25 2000

903000:TPA:ss
8100

MEMORANDUM FOR: Assistant Inspector General for Audit

FROM: Director

SUBJECT: Draft Audit Report on the Bureau of Alcohol, Tobacco and Firearms (ATF) Conversion of the Firearms Tracing System

This serves to respond to your draft audit report dated March 2, 2000, on the Firearms Tracing System (FTS). The objective of the audit was to determine if ATF effectively converted the FTS from a mainframe to a client server operation. We always welcome this type of review that results in constructive recommendations for improvement in the services we provide to the public and efficiencies in our use of the tax dollar. I wish to compliment you and your staff for the thorough and professional manner in which this audit was conducted.

The report is accurate and contains some very constructive recommendations that will assist ATF in strengthening the Information Technology (IT) process so that these types of projects are effectively implemented. The Office of Inspector General (OIG) audit team in this instance provided an analysis of their results from a user satisfaction questionnaire on the FTS, which we find quite valuable. Your report overall presents three findings, with a total of nine recommendations. ATF's responses are provided below, addressed in the same order as in the draft. We agree with and will implement all recommendations.

MANAGEMENT RESPONSE

Assistant Inspector General for Audit

FINDING 1: **ATF NEEDS TO ASSESS USER NEEDS AND PERFORM FORMAL REVIEWS OF INFORMATION TECHNOLOGY (IT) PROJECTS**

RECOMMENDATION: *Document and implement a process for (a) conducting Post-Implementation Reviews (PIRs) on IT projects... and (b) defining roles and responsibilities of individuals who will address identified problems.*

We concur with the recommendation. The Office of Science and Technology (OST) will begin developing a directive for conducting post implementation reviews on IT projects. This process will include role and responsibility identification. The directive will be completed during Fiscal Year 2000.

RECOMMENDATION: *Review the results of the OIG survey to determine what other issues may need to be addressed with the FTS.*

We concur with the recommendation. During this fiscal year, OST's Software Management Branch (SMB) will work with the National Tracing Center (NTC) to establish a team consisting of user representatives from ATF field divisions, along with the NTC's Tracing and Crime Gun Analysis Branches. The team will review the survey and make recommendations on other issues that need to be addressed within the FTS. The results of this review will be presented to the ATF's Information Resource Management Council.

RECOMMENDATION: *Conduct PIRs on subsequent phases of the FTS and other IT projects.*

We concur with the recommendation. OST will develop standard processes that include post implementation reviews of all IT projects. The documentation will be completed during Fiscal Year 2000. The audit report states that ATF's Office of Inspection would be performing the PIRs. However, further review of PIR requirements support OST coordinating the post implementation reviews in conjunction with the program offices. The finalized report would then be submitted to the Office of Inspection.

MANAGEMENT RESPONSE

Assistant Inspector General for Audit

FINDING 2: PLANNING DOCUMENTS SHOULD BE MAINTAINED AND KEPT CURRENT

RECOMMENDATION: *Planning documentation for each IT project be kept as current and as accurate as possible.*

We concur with the recommendation. The SMB will ensure that planning documentation for each IT project will be kept as current and as accurate as possible. To ensure updated and accurate documentation, a group consisting of users and IT personnel will convene regularly as a formal configuration management review team.

This team will submit requested changes to senior management and to the Information Services Division (ISD) Enterprise Configuration Management Control (ECMC) team. In addition, application documentation will be included within the Polytron Version Control System (PVCS) automated version control management system.

RECOMMENDATION: *A senior official...is involved in future FTS phases and other major IT projects.*

We concur with the recommendation. ISD has recently hired a Software Management Branch Chief to help ensure that a senior official at the appropriate level is involved in any future significant IT projects. Currently, the Division Chief, National Tracing Center; Director, Youth Crime Gun Interdiction Initiative; and the Division Chief, Information Services are jointly involved in discussions of requirements, production delivery schedules, and performance expectations of future changes to the FTS and related systems.

RECOMMENDATION: *OST officials complete actions to develop a policy for a System Development Life Cycle (SDLC). This action should include...*

We concur with the recommendation. OST will complete the development of the System Development Life Cycle and implement in Fiscal Year 2001. As noted in your report, steps have already been taken to improve involvement by client managers from the appropriate program areas.

MANAGEMENT RESPONSE

-4-

Assistant Inspector General for Audit

FINDING 3: ATF NEEDS TO TRACK IT PROJECT COSTS AND DEVELOP PERFORMANCE REPORTS

RECOMMENDATION: *Establish and implement directives on monitoring IT project costs, schedule, and performance.*

We concur with the recommendation. The Information Services Division (ISD) is currently working on developing a methodology for monitoring IT project costs, scheduling, and performance. This cost, schedule, and performance monitoring will be implemented during Fiscal Year 2001. OST has solicited the involvement of program offices in monitoring IT projects. To this end, we have reviewed all new statements of work, and in some cases rewritten many so that expectations of performance and scheduling of product delivery are more clearly stated.

RECOMMENDATION: *Hold project manager(s) accountable for addressing issues and risks that arise during the project.*

We concur with the recommendation. As part of the new pay banding demonstration project, each project manager will be accountable for, among other things, addressing all issues and risks that arise during a project and will be evaluated on their performance in this area.

RECOMMENDATION: *Adequately supervise the COTR for compliance with the COTR Handbook.*

We concur with the recommendation. The OIG's concern about contracting officers' technical representatives' (COTR) adherence to the COTR Handbook was raised in an earlier audit. As indicated in ATF's previous audit response, we have taken action to ensure all identified COTRs have had both the basic and any appropriate refresher training. When the final version of the previous OIG report is released, it will become the training portion of the next Acquisition Branch meeting and the next COTR Refresher Training. Relevant information from the final version of the report will be provided to all ATF contracting officers, procurement analysts, and COTRs.

MANAGEMENT RESPONSE

-5-

Assistant Inspector General for Audit

(Finding Number Three Cont'd)

Additionally, an ISD staff member has been assigned to oversee all the COTRs. The staff member has regular meetings with all the COTRs to ensure contract compliance providing an additional level of supervision. In addition, the team of COTRs also has routine meetings with ATF's Contracting Officer.

Again, I appreciate the thorough work of your team, and the opportunity to provide comment on their findings. Should you need any further information concerning the contents of this document, please contact Terrence Austin, YCGII Director, at (202) 927-8425 to facilitate your request.

Bradley A. Buckles

MAJOR CONTRIBUTORS TO THIS REPORT

Chicago Field Office

Roberta N. Rickey	Director
Robert K. Bronstrup	Audit Manager
Patrick Nadon	Auditor
Gary Wilk	Auditor
Brad Mosher	Auditor

REPORT DISTRIBUTION

U.S. Department of the Treasury

Office of the Under Secretary of the Treasury for Enforcement
Office of the Assistant Secretary of the Treasury for Management/ Chief Financial Officer
Office of Strategic Planning and Evaluations, Departmental Offices
Office of Accounting and Internal Control, Departmental Offices
Office of Budget, Departmental Offices

Bureau of Alcohol, Tobacco and Firearms

Director
Assistant Director, Office of Inspections
Assistant Director, Science & Technology/CIO
Assistant Director, Management/CFO
Assistant Director, Liaison & Public Information
Assistant Director, Alcohol & Tobacco
Assistant Director, Firearms, Explosives & Arson
Assistant Director, Field Operations
Assistant Director, Training & Professional Development
Chief, Acquisitions & Property Management Division
Deputy Chief, Financial Officer/Financial Management Division
YCGII Director

Office of Management and Budget

Treasury Bureau Chief